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United States
Environmental Protection
Agency

Office of Public Affairs
Region 5
230 South Dearborn
Chicago, Il 60604

Illinois Indiana
Michigan Minnesota
Ohio Wisconsin

Cleanup Of Outboard Marine Corporation/Waukegan Harbor Site

Explanation Of Significant Differences

September 1988

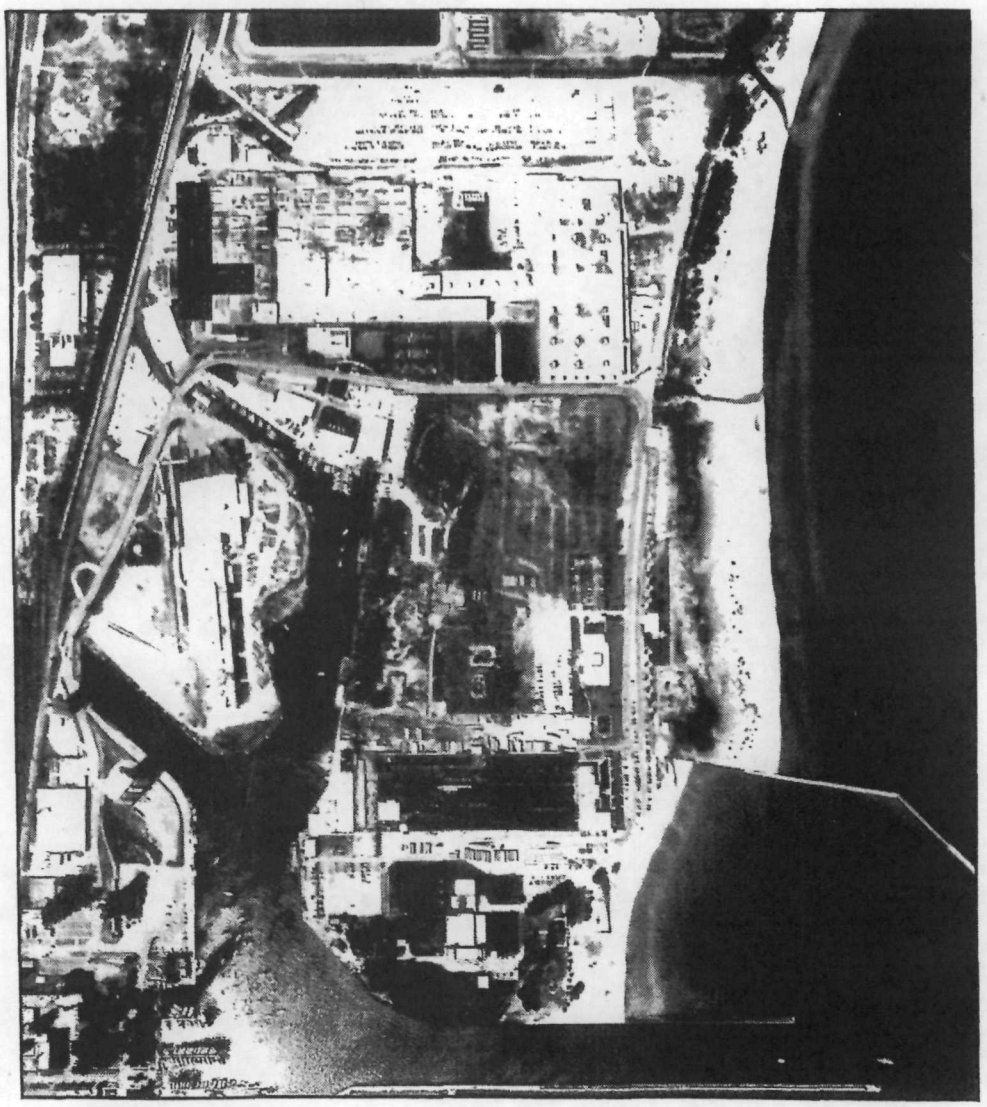
INTRODUCTION

The purpose of this document is to announce that a Consent Decree, signed by the United States, the State of Illinois and Outboard Marine Corporation (OMC), has been lodged with the United States District Court for the Northern District of Illinois. The Consent Decree sets forth the remedial action which will be undertaken to clean up the OMC Waukegan Harbor site (the "site") in Waukegan, Illinois.

The execution of this Consent Decree marks the culmination of over ten years of efforts to clean up the site. This document provides a brief background of the site, describes the remedial action to be undertaken and explains the ways in which this remedial action differs from that selected by the U.S. Environmental Protection Agency (EPA) in the Record of Decision (ROD) signed in 1984.

Under Section 117 of the Comprehensive Environmental Response Compensation and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), EPA is required to publish an explanation of significant differences from the 1984 ROD. EPA will hold a public meeting and solicit public comments with respect to the proposed remedial action. Under Department of Justice regulations, notice of this Consent Decree will be published in the Federal Register and public comments regarding the decree will also be received. At the close of the public comment period, the comments will be evaluated to ensure that the proposed remedial action is appropriate and consistent with the law. The United States and Illinois will then request the Court to sign the Consent Decree, at which time it will become effective.

This Fact Sheet will, by necessity, present only a synopsis of information on the site. The administrative record, which contains the complete documentation, is available for public review at Waukegan Public Library, 128 N. County, Waukegan, and can be consulted for a thorough review of the site history, studies, and pertinent decisions. An additional information repository is located at Waukegan City Hall, 106 N. Utica Street.



SITE HISTORY AND BACKGROUND

OMC operates a recreational marine products manufacturing plant located near the intersection of Grand Avenue and Sheridan Road on the west shore of Lake Michigan in Waukegan, Illinois, about 37 miles north of Chicago and 10 miles south of the Wisconsin state border. Polychlorinated biphenyls (PCBs) were used in its die cast machines at this plant from at least 1961 until the early 1970's. In 1976, high levels of PCBs were discovered in the soils and harbor sediments on-site.

From approximately 1961 to 1972, OMC purchased a hydraulic fluid used in the die-casting works that contained PCBs. Some of these fluids escaped through floor drains. The floor drains discharged to an oil interceptor system which discharged to the North Ditch. Some of the PCBs escaped from a portion of the oil interceptor, diversion and pump system, and were released to the Waukegan Harbor. The harbor area discharge was located in the western end of Slip 3, and the north property discharge was in the Crescent Ditch. The discharge pipe to the harbor was sealed in 1976.

As a result of these discharges, large quantities of PCBs are in Waukegan Harbor and on OMC property in the North Ditch/ Oval Lagoon/ Crescent Ditch area and in the parking lot and Slip 3. It is estimated that there are over 700,000 pounds of PCBs on OMC property and approximately 300,000 pounds of PCBs in Waukegan Harbor. The range of PCB concentrations are set forth in Figure 2

In 1984, after conducting numerous studies of PCB contamination at the site and completing a Feasibility Study (FS) which analyzed various alternative remedies to clean up the contamination, the EPA, in accordance with Superfund regulations, selected a recommended remedial alternative to be implemented, using monies from the Hazardous Substances Trust Fund (Superfund). This remedial selection is set forth in the 1984 Record of Decision (ROD) authorizing expenditures of $21 million to clean up the site. That same year the engineering design work for the selected remedial action was initiated. However, in late 1985, design work on the project was suspended pending the conclusion of litigation between OMC and EPA regarding access to OMC's property, since such access was essential to continue the design process.

While this litigation was pending before the courts, SARA was enacted and signed by the President. SARA amendments call for "permanent remedies which reduce the mobility, toxicity, or volume of hazardous substances." Although RODs signed prior to October 1986 are not required to meet these new requirements, EPA decided to reevaluate the 1984 ROD to develop a remedy consistent with SARA

About the time EPA began reviewing the remedy set forth in the 1984 ROD, EPA and OMC agreed to end ongoing ac-

OMC/WAUKEGAN HARBOR SITE HISTORY OF EVENTS

1978	U.S. EPA files suit against OMC to clean up PCB contamination in Waukegan Harbor and on OMC property
1980	Congress enacts CERCLA (Superfund) bill, enabling the federal government to finance the cleanup of hazardous substances
1982	U.S. EPA includes the OMC/Waukegan Harbor site on the first proposed National Priorities List, which qualifies the site for federal cleanup funds under Superfund
1983	U.S. EPA completes a Feasibility Study examining options for cleanup at the site and public comments are solicited
1984	U.S. EPA chooses a remedial alternative for the site and signs a Record of Decision authorizing $21 million for cleanup
	U.S. Army Corps of Engineers begins design work for selected remedial action
1985	U.S. EPA's 1978 lawsuit against OMC is dismissed while allowing for a future suit under Superfund to recover government costs for cleanup
	OMC denies U.S. EPA access to property to continue remedial design work
	EPA obtains an administrative warrant to enter property to complete design work
	OMC obtains a stay of the warrant and protracted legal proceedings result
1986	EPA appeals decision allowing OMC to deny access to property to the U.S. Supreme Court
	Superfund Amendments and Reauthorization Act (SARA) is enacted granting EPA access authority to implement Superfund remedies
	EPA and OMC agree to end ongoing access litigation and begin negotiations to clean up site
1988	Negotiations between EPA and OMC result in a Consent Decree and recommended remedial alternative to permanently clean OMC/Waukegan Harbor site

cess litigation. Shortly thereafter, OMC submitted a proposal to clean up the site. The negotiations between OMC, EPA and Illinois Environmental Protection Agency (IEPA) since late 1986 have resulted in the present Consent Decree. Under this decree, OMC will finance a Trust to implement the cleanup and will ensure performance of the Trust. The Consent Decree establishes the areas to be remediated, the methods to be used, and the financial responsibility, both immediate and long-term, for the cleanup. A copy of the Consent Decree is available in the OMC site information respositories

BACKGROUND ON PCB CONTAMINATION

PCBs, or polychlorinated biphenyls, are compounds which belong to a broad [illegible]ily of organic chemicals known as [illegible]rinated hydrocarbons. Virtually all chlorinated hydrocarbons are synthetically manufactured and are used for a wide variety of industrial and commer[illegible] purposes Manufacture of PCBs in the United States began in 1929, primarily by Monsanto Company. PCBs have many useful properties, including unusually good chemical and thermal stability, fire resistance, non-conductivity and low solubility in water.

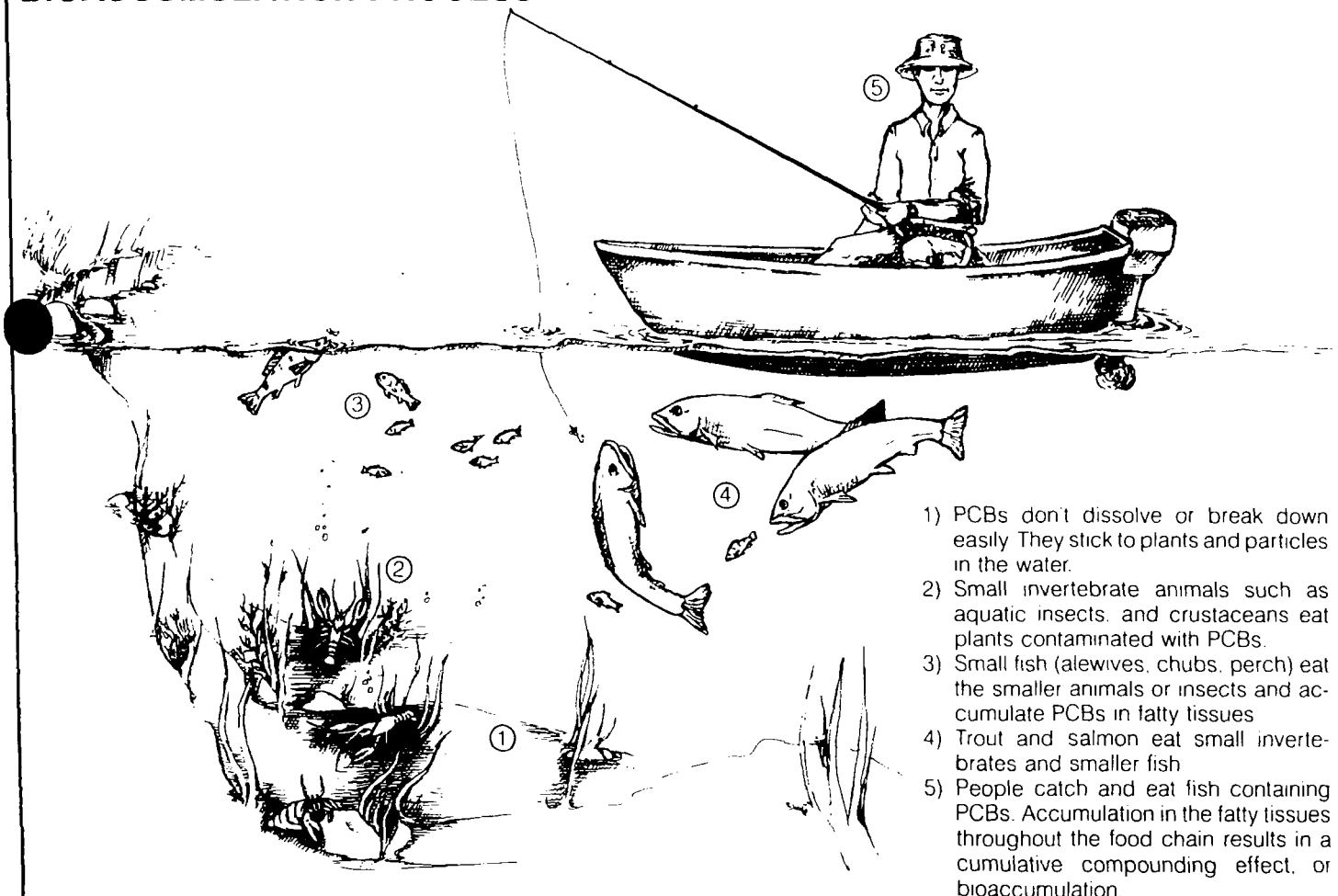
In the late 1960's evidence had accumulated that PCBs had toxic properties. One incident of severe human contamination by extremely high levels of PCBs in Japan in 1968 led to world attention being focused on the potential toxic effect of PCBs on humans. Studies indicate that long-term exposure to high levels of PCBs in humans can lead to liver and dermal disorders, and may cause cancer. Tests on laboratory animals show that PCBs can cause reproductive failures, liver disorders, skin lesions and tumors

In 1971, industry limited its sales of PCBs to closed system uses (uses which do not release fluids to the environment) and by 1977, PCBs were no longer manufactured in the United States. However, although production was halted, most of the PCBs manufactured between 1929 and 1971 are still in existence due to their unusual stability and persistence. PCBs are usually found in higher concentrations in soils and sediments as the compound is relatively insoluble in water, but readily adsorbs to soil. Humans are primarily exposed to PCBs through accumulation in the food chain, or bioaccumulation (see Figure 1).

SUMMARY OF THE 1984 RECORD OF DECISION (ROD)

The objective of the 1984 ROD was to clean up areas within the site which contained PCB contamination of 50 ppm (parts per million) or greater. With this criteria in mind, three main areas of contamination were targeted for remediation. 1) The Upper Harbor and Slip 3; 2) the OMC parking lot, which is at the north end of the site and covers approximately 9 acres; and 3) the North Ditch, Crescent Ditch and Oval Lagoon areas, which are on OMC property immediately

BIOACCUMULATION PROCESS



1) PCBs don't dissolve or break down easily They stick to plants and particles in the water.
2) Small invertebrate animals such as aquatic insects, and crustaceans eat plants contaminated with PCBs.
3) Small fish (alewives, chubs, perch) eat the smaller animals or insects and accumulate PCBs in fatty tissues
4) Trout and salmon eat small invertebrates and smaller fish
5) People catch and eat fish containing PCBs. Accumulation in the fatty tissues throughout the food chain results in a cumulative compounding effect, or bioaccumulation.

Figure 1

o the north and west of the parking lot. he criteria for defining the areas for remediation are the same in the present emedy as in the 1984 ROD; however ne methods for accomplishing the leanup have changed.

he remedy selected in the 1984 ROD consisted of the following elements:

- All PCB "hot spots" of 10,000 ppm and above were to be dredged from Slip 3, dewatered, fixed and sent to an off-site licensed chemical waste landfill.
- Remaining sediments in Slip 3 and the Upper Harbor were to be dredged, dewatered in large lagoons to be constructed on OMC property, and disposed of in a containment cell to be constructed above the parking lot area.
- "Hot spots" (over 10,000 ppm) on the North Ditch area were to be removed, fixed and transported for off-site disposal.
- The dredged material from Slip 3 and the Upper Harbor was to be placed on the parking lot area, encapsulated by slurry walls and capped with a layer of impermeable clay.
- The North Ditch area was to be enclosed with slurry walls and capped with impermeable clay.

SUMMARY OF 1988 PROPOSED REMEDY

The 1988 proposed remedy addresses the same areas for remediation as were addressed in the 1984 ROD (Slip 3 and the Upper Harbor; the North Ditch, Crescent Ditch/Oval Lagoon area on OMC property and the OMC parking lot).

The following is a summary of the proposed steps to be taken in the remedial action for the site:

- A new slip will be constructed on the east side of the Upper Harbor to replace Slip 3 and Larsen Marine will be relocated from its present location to the new slip (see Figure 3).
- Slip 3 will be permanently isolated from the Upper Harbor by the construction of a double-walled, braced, and soil backfilled sheet pile cutoff wall. After the slip is isolated an impermeable clay slurry wall with a minimum thickness of three feet will be constructed which will be tied into the underlying clay

OMC SITE — BEFORE REMEDIAL ACTION

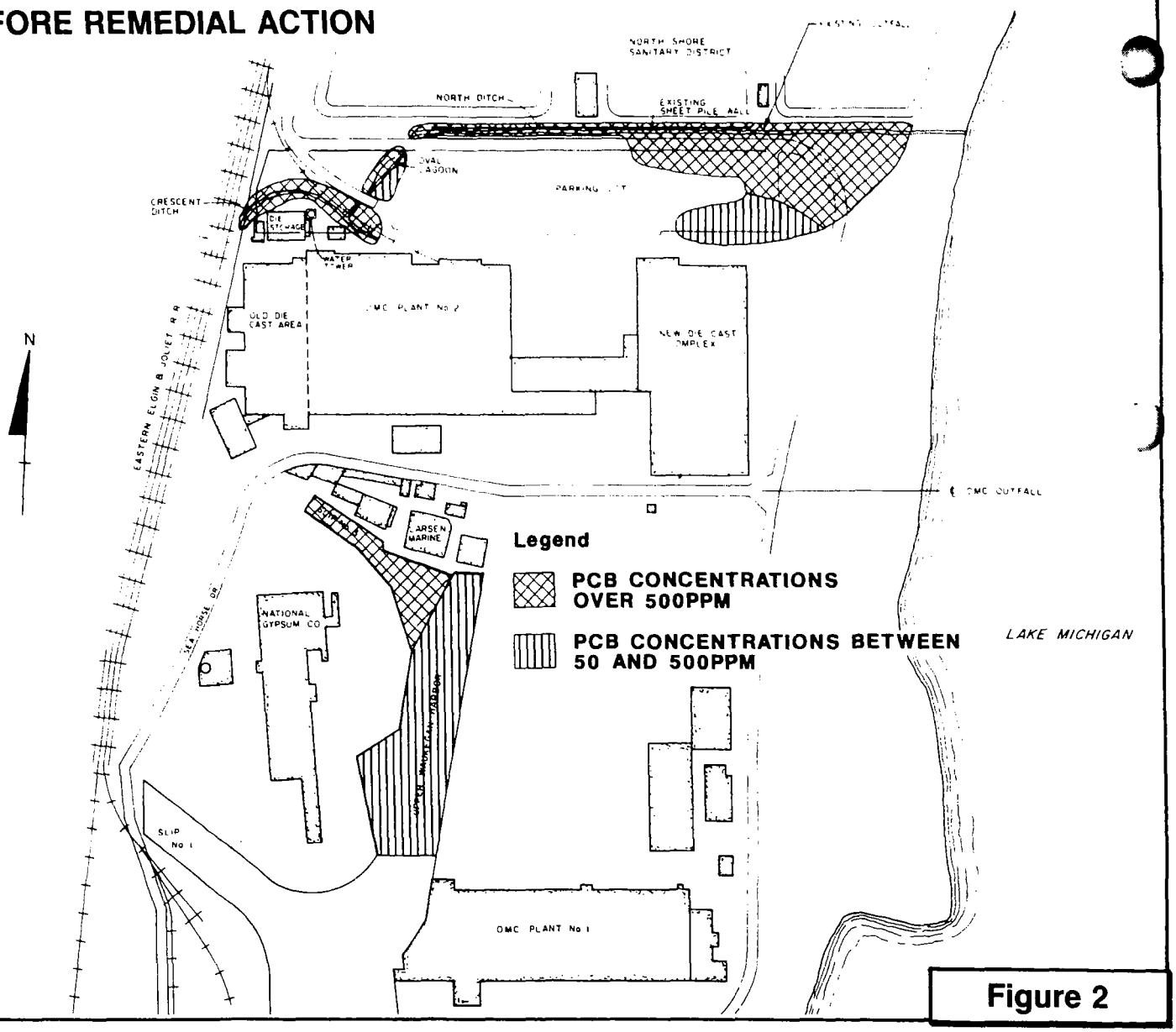


Figure 2

till, and a permanent containment cell will be built in the slip.

- The most highly contaminated sediments from Slip 3 with PCB concentrations in excess of 500 ppm will be dredged from the slip and removed and isolated for treatment. The Upper Harbor will be dredged and the dredged materials placed in the newly constructed Slip 3 Containment Cell.

- Two additional containment cells will be constructed using the same design used for the construction of the Slip 3 Containment Cell (see Figure 5). The East Containment Cell will encompass part of the parking lot area and land to the east of the lot and the West Containment Cell will encompass the Crescent Ditch and Oval Lagoon area. Before constructing the West Containment Cell, soils contaminated in excess of 10,000 ppm will be excavated and removed for treatment.

- Soils and sediments excavated from Slip 3, and the North Ditch, Crescent Ditch and Oval Lagoon areas designated for treatment will be subjected to an on-site thermal or chemical extraction process. After startup, this treatment technology is guaranteed to remove at least 97 percent of the PCBs by mass from the contaminated materials without endangering public health. The treated sediments will be placed in the West Containment Cell. Extracted PCBs will be disposed of off-site in accordance with all applicable federal and state laws.

- A short-term water treatment facility will be constructed for treating water generated during the remedial construction activities. Dredge water will be treated by sand filtration. Other water generated during the course of remedial activity will be treated utilizing the sand filtration step to remove sediments from the water, followed by carbon adsorption, to achieve acceptable standards established by EPA. A smaller permanent water treatment facility will be constructed to treat water extracted from the containment cells. Treated water will be discharged to the North Shore Sanitary District or to an on-site location approved by EPA.

- When all materials have been deposited in the cells, they will be closed and capped with a high

OMC SITE — DURING REMEDIAL ACTION

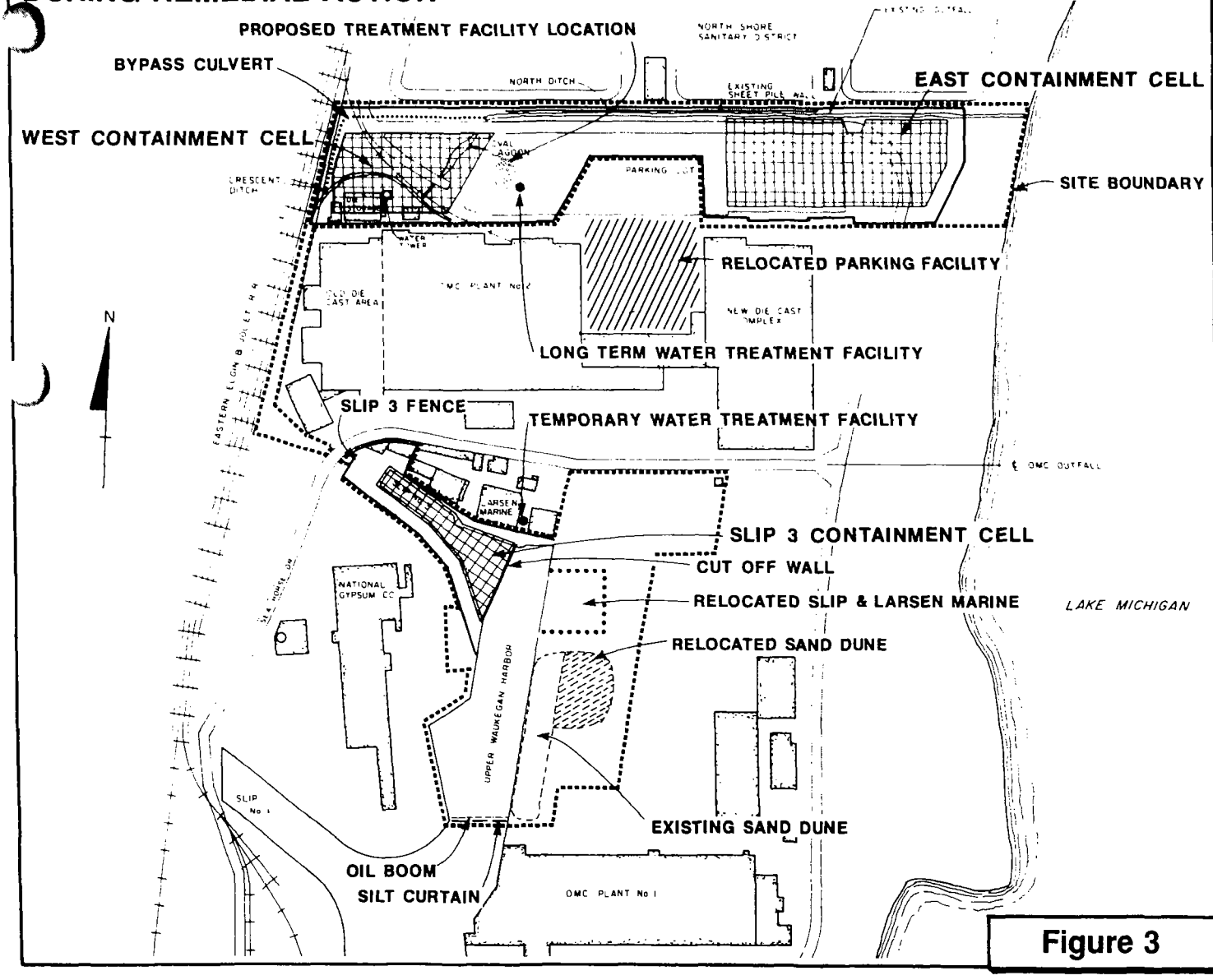
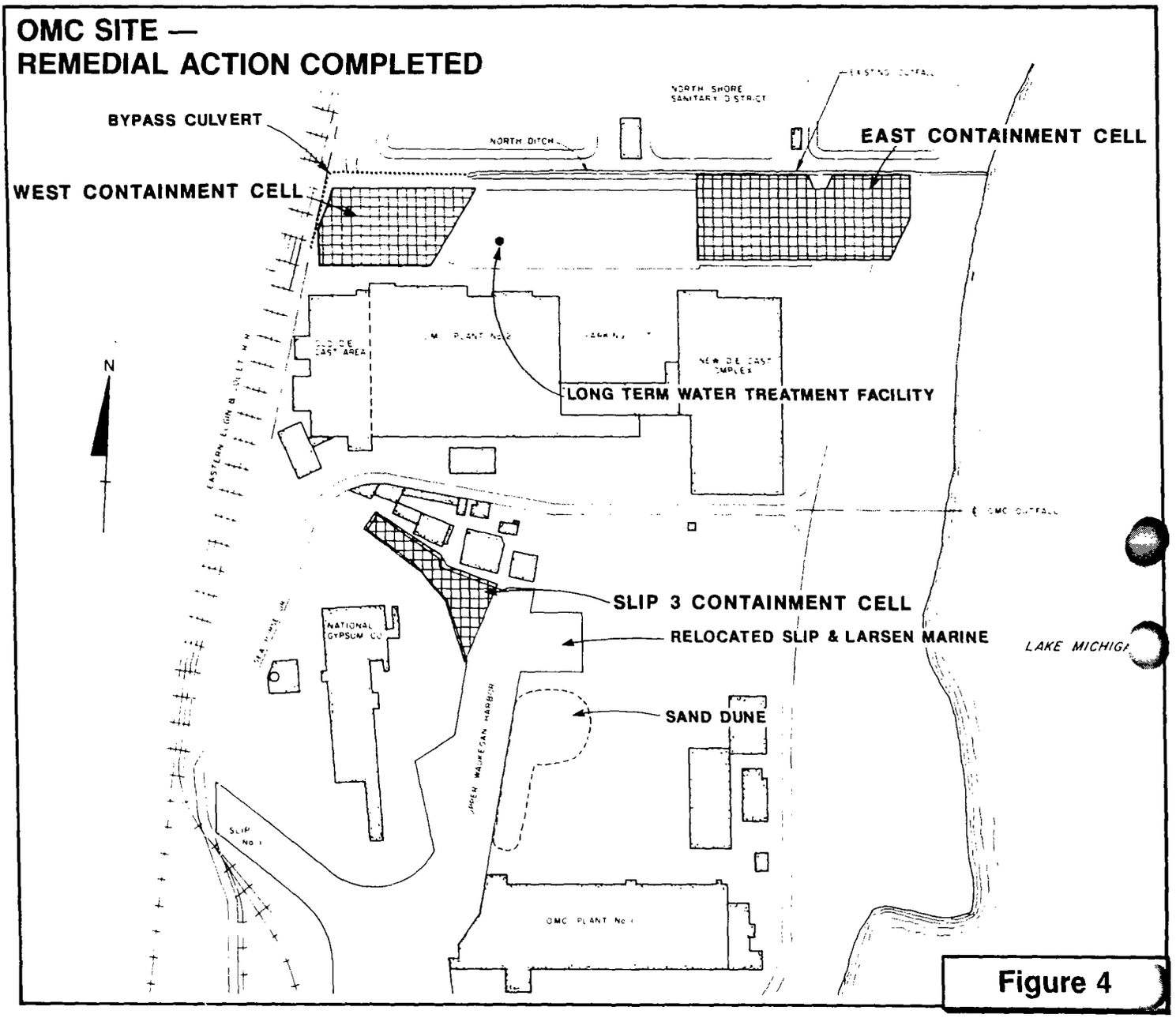
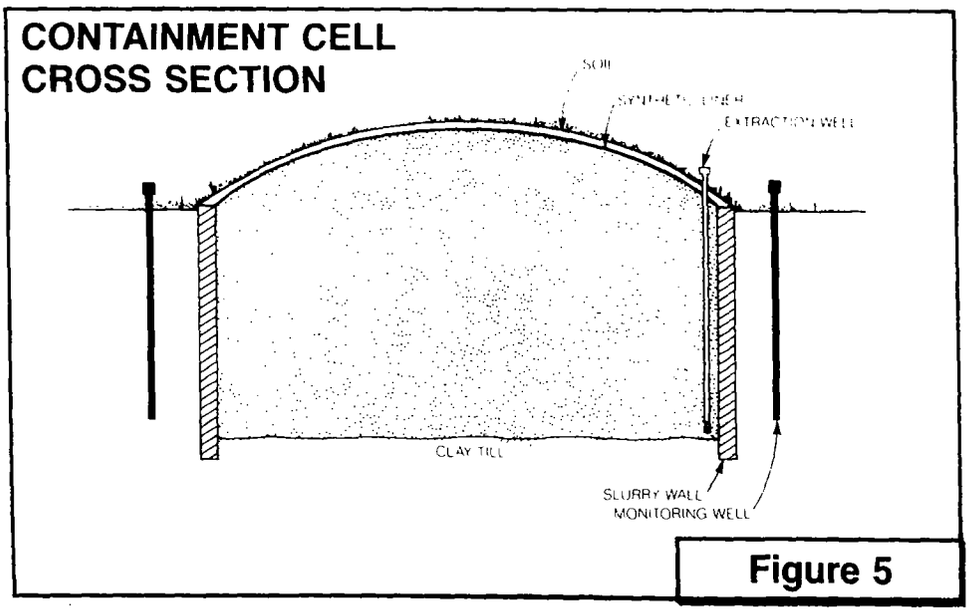


Figure 3



density polyethylene (HDPE) liner and soil cover The cells will include extraction well systems which are designed to prevent the migration of PCBs from the cells. The three cells will be operated and maintained by OMC.

- Throughout the construction and treatment processes, stringent measures will be taken to protect public health and the environment. These health and safety measures will include air monitoring, dust suppression, and all other necessary protective measures, which will be detailed during the design phase and submitted to EPA for approval before construction and remedial action are initiated.



EXPLANATION OF DIFFERENCES

The major differences between the 1984 ROD and the 1988 Consent Decree are as follows:

- The 1988 decree provides for a new slip to be built to replace the old Slip 3 and relocates Larsen Marine to the new slip.
- The present remedy expands the definition of "hot spot" areas to include all material in Waukegan Harbor 500 ppm and above, thereby including a larger amount of material.
- The containment cells are built in-ground with protective slurry walls tied into the clay till and extraction wells to maintain an inward hydraulic gradient (a lower water level inside the cell than outside).
- The "hot spot" material is to be treated on-site in the manner discussed above, rather than transported off-site for disposal in a licensed PCB landfill. The on-site treatment eliminates the need for dewatering lagoons called for in the 1984 ROD

The proposed remedy will greatly reduce existing risks to PCB exposure on OMC property and will improve the water quality of Waukegan Harbor. The 1988 remedy will result in at least an equivalent protection of public health and the environment as the 1984 ROD. The 1984 ROD determined that excavation and off-site disposal of hot spot areas was necessary to enhance the reliability of on-site containment. The proposed remedy expands the amount of material designated for removal and treatment by including all contaminated materials in excess of 500 ppm rather than the 1984 level of those in excess of 10,000 ppm.

The hot spot material, rather than being transported off-site for disposal in a licensed landfill, will be treated so that, after startup, at least 97 percent of the PCBs will be removed and destroyed. The public will not be exposed to the risks involved in transporting large amounts of contaminated materials off-site. In addition, treatment of the PCBs in this manner is consistent with the goal of SARA to permanently reduce the toxicity, mobility and volume of hazardous materials

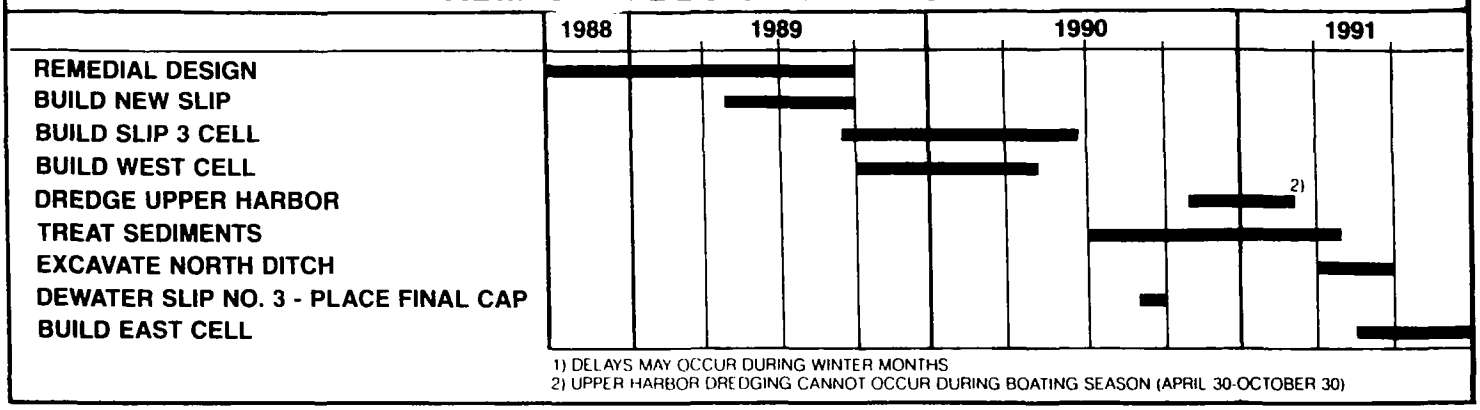
Placing low concentration materials from the Upper Harbor in the Slip 3 Containment Cell will provide an equivalent level of protection as the above-ground vault specified in the 1984 ROD. Containment in Slip 3 reduces the risks inherent in handling and transporting the contaminated materials and eliminates the use of on-site dewatering lagoons. This containment alternative was previously recommended by EPA but was withdrawn because of the economic impact on the harbor. The 1988 proposed remedy allows the advantages of this method while providing for the economic well-being of the businesses affected.

The containment cells actively prevent migration of PCBs through slurry walls by maintaining an inward hydraulic gradient through a system of extraction wells. The volume of sediments being placed into the cells is greater than in the 1984 remedy; however the sediments will have been treated on-site and 97 percent of the PCBs extracted, thus reducing the volume of PCBs in the cells. In addition, the cells will be capped with a synthetic liner which will prohibit precipitation infiltrating from the outside. Samples will be taken at regular intervals from monitoring wells outside the walls of the cells to ensure that PCBs are not migrating into the surrounding soils and groundwater, thus safeguarding the public health and environment

OUTBOARD MARINE CORPORATION
DIFFERENCES BETWEEN 1984 ROD AND 1988 PROPOSED REMEDY

1984 ROD	1988 PROPOSED REMEDY
Slip 3 to be dredged	Slip 3 to be dredged and closed. Larsen Marine relocated to new slip to be constructed
Waukegan Harbor sediments to be stored in parking lot cell	Waukegan Harbor sediments contained in Slip 3 cell
"Hot spots" (defined as >10,000 ppm) fixed and transported off-site	"Hot spots" (defined as >500 ppm in Slip 3 and >10,000 on OMC property) permanently treated on site
Required transportation of sediments off-site to hazardous waste landfill	On-site sediment containment requires no off-site transportation
Large on-site dewatering lagoons to be constructed	Use of Slip 3 cell for dewatering with on-site water treatment
Containment cells had clay cap and no extraction wells	Containment cells have synthetic and soil caps and extraction wells

PROJECTED SCHEDULE
REMEDIAL DESIGN AND ACTION [1]



1) DELAYS MAY OCCUR DURING WINTER MONTHS
2) UPPER HARBOR DREDGING CANNOT OCCUR DURING BOATING SEASON (APRIL 30-OCTOBER 30)

PUBLIC COMMENT

Members of the community are encouraged to attend a public meeting to be announced for information regarding the proposed remedial action for the OMC site and the Consent Decree Comments on the Proposed Remedy and Consent Decree will be accepted for a 30 day period. A transcript of the comments will be entered into the repositories at the following locations

*Waukegan Public Library	Waukegan City Hall
128 N. County	106 N Utica Street
Waukegan, IL	Waukegan, IL

*Administrative Record Location

Your comments should be directed to.

John Perrecone 5-PA
Office of Public Affairs
U S EPA, Region V
230 S Dearborn
Chicago, IL 60604
(312)886-6685
Toll Free number 1-800-621-8431
(8 30 a m to 4.30 p.m Central Time)

MAILING LIST ADDITIONS AND CORRECTIONS

If you would like your name added to the mailing list to receive information on the OMC site or to update your address, please fill out and mail this form to:

John Perrecone
Office of Public Affairs
U S EPA - Region 5
230 South Dearborn Street
Chicago, IL 60604

Name _____

Address _____

City _____ State _____ Zip _____

Telephone _____

Affiliation _____

EPA

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